

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
 100098
 China 19 A, Tower A, InDo Building, No. 48A
 Zhichun Road, Haidian District, Beijing

INSIGHT INTELLECTUAL PROPERTY LIMITED

PCT

WRITTEN OPINION OF THE
 INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing <i>(day/month/year)</i> 19 October 2018	
Applicant's or agent's file reference 18A52205	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/CN2018/095003	International filing date <i>(day/month/year)</i> 09 July 2018
International Patent Classification (IPC) or both national classification and IPC G05D 1/02(2006.01)i; G01C 21/34(2006.01)i; B60W 30/00(2006.01)i	
Applicant BAIDU.COM TIMES TECHNOLOGY (BEIJING) CO., LTD. et al	

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/ STATE INTELLECTUAL PROPERTY OFFICE OF THE P.R.CHINA China 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088	Date of completion of this opinion 15 October 2018	Authorized officer WEN,Guanghui
Facsimile No. (86—10) 62019451	Telephone No. 62085858	

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
 - on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-21</u>	YES
	Claims	<u>None</u>	NO
Inventive step (IS)	Claims	<u>None</u>	YES
	Claims	<u>1-21</u>	NO
Industrial applicability (IA)	Claims	<u>1-21</u>	YES
	Claims	<u>None</u>	NO

2. Citations and explanations :

- [1] The report refers to the following documents:
- [2] D1: WO2018-090289A, 24 May 2018(24.05.2018)
- [3] D2: US2005-0234629A1, 20 October 2005(20.10.2005)
- [4] D3 : US2011-0141136A1, 16 June 2011(16.06.2011)
- [5] 2.1 Novelty
- [6] D1, which is considered to be the prior art closest to claim 1, discloses a method comprising:
- [7] determining a current speed of the autonomous vehicle (see claim 4);
- [8] calculating a first torque force for accelerating an autonomous vehicle to maneuver the autonomous vehicle, wherein calculating the first torque force comprises determining a first speed representing a target speed of the autonomous vehicle to maneuver the autonomous vehicle at a first reference time (see claims 1, 2) ;
- [9] calculating an error value as the difference between a target value and an actual value and applying a correction based on proportional, integral, and derivative terms, denoted as P,I and D respectively, wherein a PID controller is a control loop feedback mechanism (see paragraph [0066]); and
- [10] controlling a subsequent speed of an ADV based on a throttle-brake torque force by a control module of a perception and planning system (see paragraph [0067] and figure 8).
- [11] Claim 1 differs from D1 in updating a portion of a calibration table based on the determined feedback error. Therefore, claim 1 is novel and satisfies the criteria of PCT Article 33(2).
- [12] Claims 2-11 are dependent on claim 1, so claims 2-11 are novel and satisfy the criteria of PCT Article 33(2).
- [13] The technical features of claims 12 and 17 are similar to claim 1. For the same reason, claims 12 and 17 are novel and satisfy the criteria of PCT Article 33(2).
- [14] Claims 13-16 and 18-21 are dependent on claims 12 and 17 respectively, so said claims are novel and satisfy the criteria of PCT Article 33(2).
- [16] 2.2 Inventive Step
- [17] D2 discloses inputting a deviation between a driving force command and an actual driving force to an adding section to correct the error of a driving force characteristic map (see paragraph [0020]).
- [18] A person skilled in the art would have easily conceived the technical solution defined in claim 1 by combining D1 and D2. Hence, claim 1 does not involve an inventive step in the sense of PCT Article 33(3).
- [19] As for dependent claim 2, D1 discloses that an inertial measurement (IMU) unit 213 may sense position and orientation changes of the autonomous vehicle based on inertial acceleration (see paragraph [0033]).
- [20] As for dependent claims 3-6, D2 discloses driving force characteristic map where an accelerator opening has been determined in response to an intersection of the driving force and the vehicle speed (see paragraph [0018] and figure 3).

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Box No. V

**Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability;
citations and explanations supporting such statement**

- [21] As for dependent claims 7-9, D3 discloses inverse distance weighting interpolation function to be calculated at a point (X,Y), which is an unknown point, and which is called the interpolation point (see paragraphs [0313]-[0323]).
- [22] As for dependent claim 10, the additional feature comes within the scope of the customary practice followed by a person skilled in the art, especially in the feedback circuit.
- [23] As for dependent claim 11, the additional features are disclosed by D1 (see claims 1,2) and D2 (see paragraph [0020]).
- [24] Hence, dependent claims 2-11 do not involve an inventive step in the sense of PCT Article 33(3).
- [25] The technical features of claims 12 and 17 are similar to claim 1. For the same reason, claims 12 and 17 do not involve an inventive step in the sense of PCT Article 33(3).
- [26] The additional features of claims 13-16 and 18-21 are similar to claims 2-11 respectively, so said claims do not involve an inventive step in the sense of PCT Article 33(3).
- [28] 2.3 Industrial Applicability
- [29] Claims 1-21 are industrially applicable in the sense of PCT Article 33(4) because the subject matter can be made or used in industry.

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- [2] 1. Claims 1, 12 and 17 do not meet the requirements of Article 6 PCT, because in said claims, reference is made for the first time to a calibration table by stating “updating a portion of **the** calibration table”. But the calibration table was not previously defined. Thus the aforementioned expression is taken to mean “updating a portion of **a** calibration table”.
- [4] 2. Claim 9, dependent on claim 8, is worded in reference to “the update point” of claim 8. However, claim 9 is unclear in that the term “the update point” has not been defined in claim 8, but claim 4. Therefore, claim 9 does not meet the requirements of PCT Article 6.